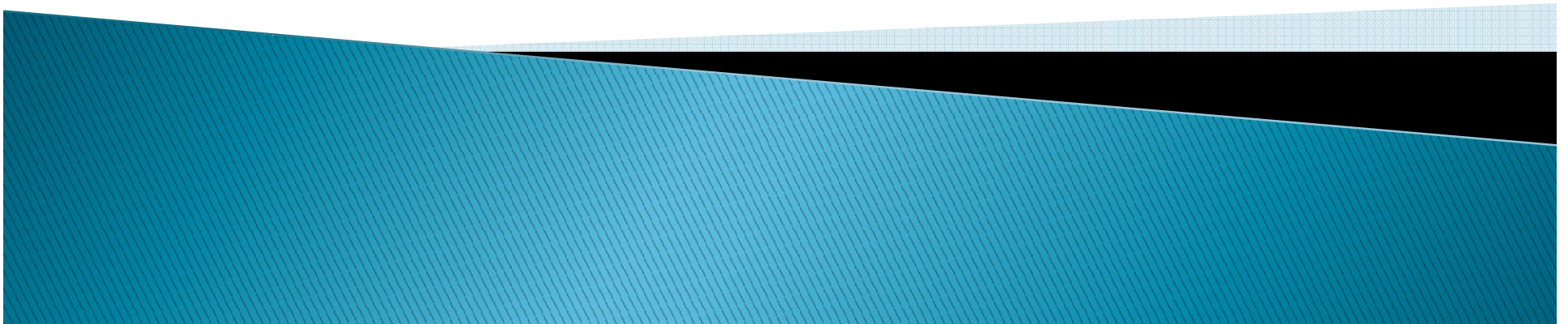


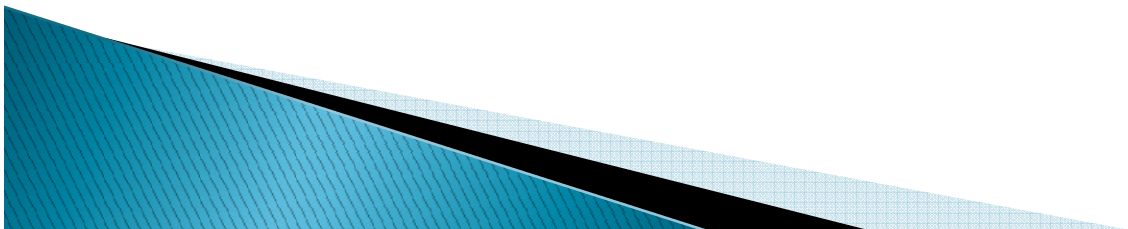
Outreach and Education

Nolan Creek Watershed
Stakeholder Meeting
July 31, 2013



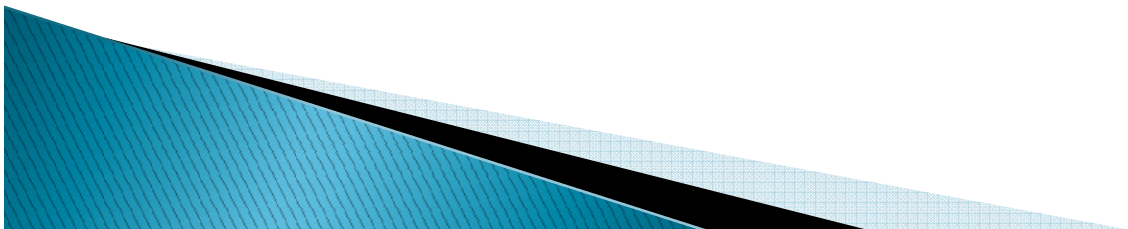
Texas Integrated Report of Surface Water Quality

- ▶ Formally called the “Texas Water Quality Inventory and 303(d) List”.
- ▶ The 2012 Texas 303(d) List was approved for submission by the TCEQ on February 13, 2013. The Environmental Protection Agency approved the report on May 9, 2013.



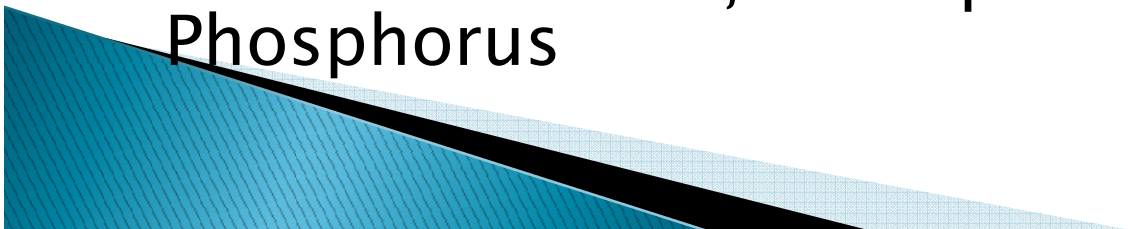
Texas Integrated Report of Surface Water Quality

- ▶ Category 5b – A review of the standards for one or more parameters will be conducted before a management strategy is selected, including a possible revision to the water quality standards.
- ▶ CS – Concern for water quality based on screening levels.



Segment 1218 (Nolan Creek)

- ▶ Segment 1218_02 (South Nolan Creek): Portion of South Nolan Creek from confluence with North Nolan / Nolan Creek fork upstream to confluence with Liberty Ditch in city of Killeen in Bell County.
- ▶ Segment 1218C_01 (Little Nolan Creek): From the confluence with Nolan Creek/South Nolan Creek upstream to headwaters in the city of Killeen, Bell County.
- ▶ 2012 Impairment: Category 5b for bacteria
- ▶ 2012 CS: Nitrate, Orthophosphorus, Total Phosphorus



2012 Texas Integrated Report: Assessment Results for Basin 12 - Brazos River

AUID **1218_02** Portion of South Nolan Creek from confluence with North Nolan / Nolan Creek fork upstream to confluence with Liberty Ditch in city of Killeen in Bell County.

USE **Recreation Use**

Method	Parameter	ASMT Start Date	ASMT End Date	# Ass'd	Mean ass'd	# exceed	Mean exceed	Criteria	DS Qual	LOS	CF	Int LOS	TCEQ Cause	Cat
Bacteria Single Sample	E. coli	12/1/2001	11/30/2008	94		28	1099.07	394.00	SM	NS	<input type="checkbox"/>	NA	bacteria	5b
Bacteria Geomean	E. coli	12/1/2003	11/30/2010	80	187.72	1		126.00	AD	NS	<input type="checkbox"/>	NS	bacteria	5b

USE **General Use**

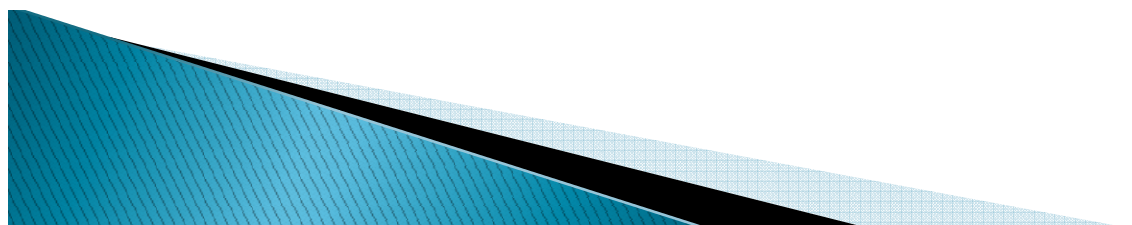
Method	Parameter	ASMT Start Date	ASMT End Date	# Ass'd	Mean ass'd	# exceed	Mean exceed	Criteria	DS Qual	LOS	CF	Int LOS	TCEQ Cause	Cat
Water Temperature	Temperature	12/1/2003	11/30/2010	38		0		33.90	AD	FS	<input type="checkbox"/>	FS		
High pH	pH	12/1/2003	11/30/2010	38		0		9.00	AD	FS	<input type="checkbox"/>	FS		
Low pH	pH	12/1/2003	11/30/2010	38		0		6.50	AD	FS	<input type="checkbox"/>	FS		
Dissolved Solids	Total Dissolved Solids	12/1/2003	11/30/2010	41	363.17	0		500.00	AD	FS	<input type="checkbox"/>	FS		
Dissolved Solids	Chloride	12/1/2003	11/30/2010	28	55.04	0		100.00	AD	FS	<input type="checkbox"/>	FS		
Dissolved Solids	Sulfate	12/1/2003	11/30/2010	28	36.42	0		75.00	AD	FS	<input type="checkbox"/>	FS		
Nutrient Screening Levels	Ammonia	12/1/2003	11/30/2010	21		0		0.33	AD	NC	<input type="checkbox"/>	NC		
Nutrient Screening Levels	Total Phosphorus	12/1/2003	11/30/2010	23		13	2.1	0.69	AD	CS	<input type="checkbox"/>	CS	total phosphorus	
Nutrient Screening Levels	Orthophosphorus	12/1/2003	11/30/2010	36		33	1.45	0.37	AD	CS	<input type="checkbox"/>	CS	orthophosphorus	
Nutrient Screening Levels	Nitrate	12/1/2003	11/30/2010	35		33	8.09	1.95	AD	CS	<input type="checkbox"/>	CS	nitrate	
Nutrient Screening Levels	Chlorophyll-a	12/1/2003	11/30/2010	26		1	16.97	14.10	AD	NC	<input type="checkbox"/>	NC		

SEGID **1218C** Little Nolan Creek (unclassified water body)

AUID **1218C_01** Entire water body

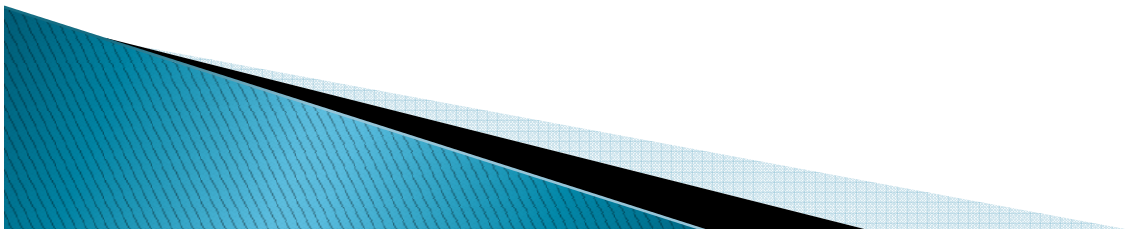
USE **Recreation Use**

Method	Parameter	ASMT Start Date	ASMT End Date	# Ass'd	Mean ass'd	# exceed	Mean exceed	Criteria	DS Qual	LOS	CF	Int LOS	TCEQ Cause	Cat
Bacteria Geomean	E. coli	12/1/2003	11/30/2010	14	163.61	1		126.00	AD	NS	<input type="checkbox"/>	NS	bacteria	5b



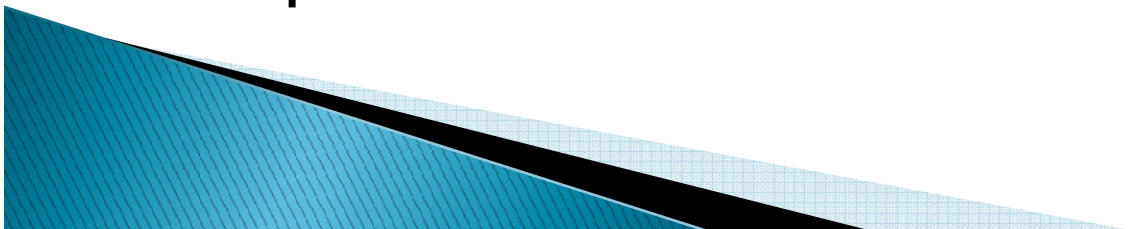
Information and Education Component of Grant

- ▶ Satisfy parts of steps 1 and 4 of Element E of the EPA 2004 Guidelines
- ▶ Contract Task 7 Deliverables: Draft and Final Information and Education Component



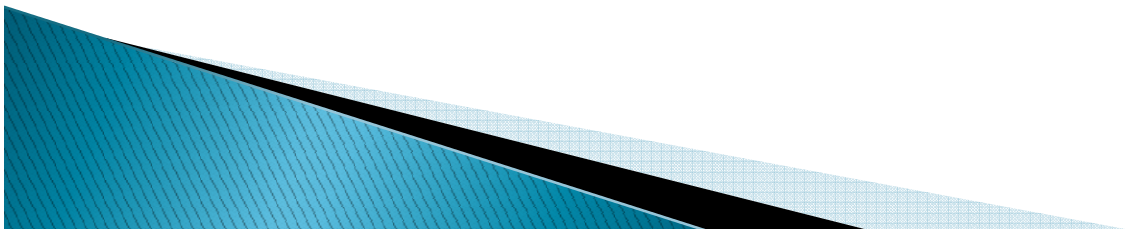
Task 7 : Information And Education Component

- ▶ Subtask 7.1: Define Education and Outreach Goals and Objectives
- ▶ Subtask 7.2: Identify and Analyze the Target Audience
- ▶ Subtask 7.3: Design the Education and Outreach Implementation Measures
- ▶ Subtask 7.4: Evaluate the Education and Outreach Program
- ▶ Subtask 7.5: Information and Education Plan Report



Input from Stakeholders

- ▶ Education and Outreach Goals for the Watershed
 - Development of general strategies to reach targeted audiences
 - Development of an evaluation component that measures qualitative and quantitative
- ▶ How do we want to achieve our those goals
 - Branding
 - Educational Materials
 - Outreach Activities



Targeted Audiences for Outreach?

▶ Individuals & Non-government Entities

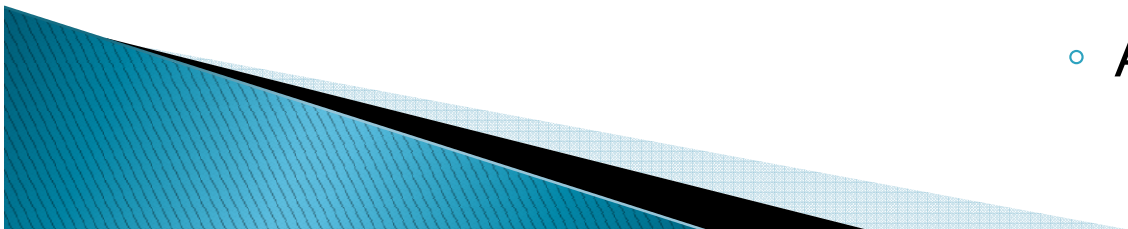
- Landowners
- Citizen groups
- Community service organizations
- Religious organizations
- Homeowners' associations
- Recreationist
- Business & Industry representatives
- Environmental & conservation groups

▶ Local and Regional Government Entities

- County or Regional Officials
- Local Municipal Representatives
- Universities, Colleges, ISDs
- Conservation Districts
- WCID's and WSC's
- MUDs

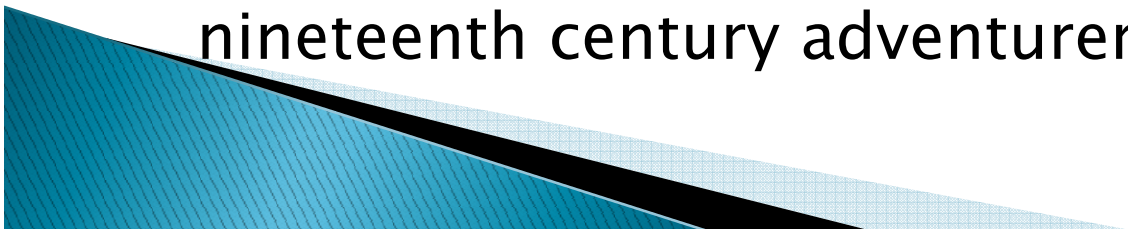
▶ State & Federal

- Fort Hood
- Agencies



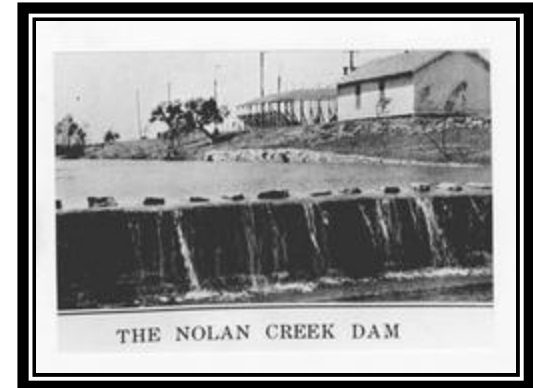
Texas State Historical Association

- ▶ Nolan Creek rises two miles northwest of Belton in central Bell County (at 31°05' N, 97°31' W), at the convergence of North Nolan Creek (which rises at 31°09' N, 97°40' W in northwestern Bell County) and South Nolan Creek (which rises at 31°07' N, 97°48' W in western Bell County). The creek then winds southeast for 9½ miles, through the greater Belton area and central Bell County, to its mouth on the Leon River, two miles east of Belton (at 31°02' N, 97°26' W).
- ▶ The main stream and its two forks flow through nearly level to sloping and undulating to rolling terrain surfaced by gravelly, loamy, and clayey soils used predominantly for agricultural purposes.
- ▶ The creek was named for Philip Nolan, an early nineteenth century adventurer.



Development of Nolan Creek Logo

- ▶ Branding
 - Swimming
 - Fishing
 - Habitat
 - Clear Water
 - Recreational
 - Historic
 - Other?



Existing Watershed Logos



LAMPASAS RIVER
WATERSHED PROTECTION PLAN

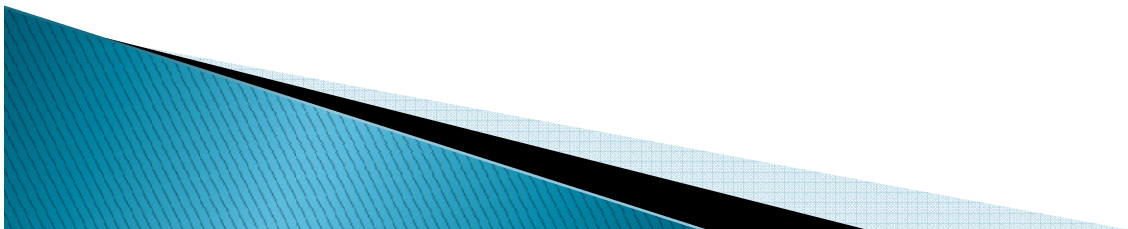
*BUILDING A SUSTAINABLE WATERSHED
COMMUNITY*

Lampasas River Watershed Partnership

LAMPASAS RIVER
WATERSHED PROTECTION PLAN

*BUILDING A SUSTAINABLE WATERSHED
COMMUNITY*

- ▶ Branding
 - Website and Partnership Brochure
- ▶ Broad Based Programs and Training Resources
 - Awareness Campaign
 - Community Events
 - TX Watershed Stewards
 - Riparian PFC Workshops
 - Signage
 - TX Stream Team
 - ISD Classroom Education
 - Household Hazardous Waste Events

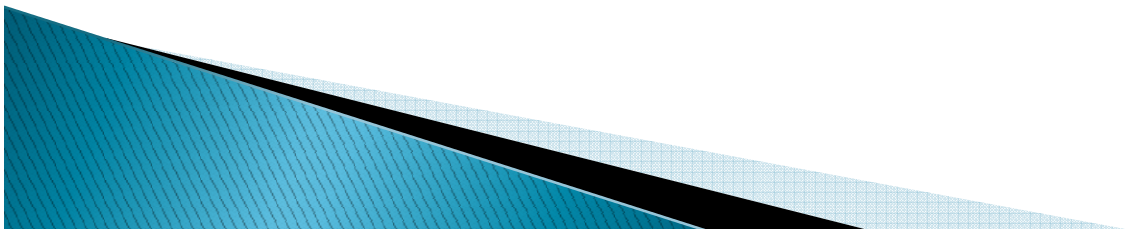


Lampasas River Watershed Partnership

LAMPASAS RIVER
WATERSHED PROTECTION PLAN

*BUILDING A SUSTAINABLE WATERSHED
COMMUNITY*

- ▶ Targeted Pollutant Source Outreach
 - Septic Systems
 - Online links to GBRA Wastewater treatment, FOG, and Storm Water training
 - Pet Waste Management
 - Urban Storm water Runoff
 - NPS Education Workshops for Municipal Officials
 - Low Impact Development Workshops
 - Storm Water BMP Demonstrations
 - Sport Athletic Fields Education Program
 - Urban Nutrient Management



Lampasas River Watershed Partnership

LAMPASAS RIVER
WATERSHED PROTECTION PLAN

*BUILDING A SUSTAINABLE WATERSHED
COMMUNITY*

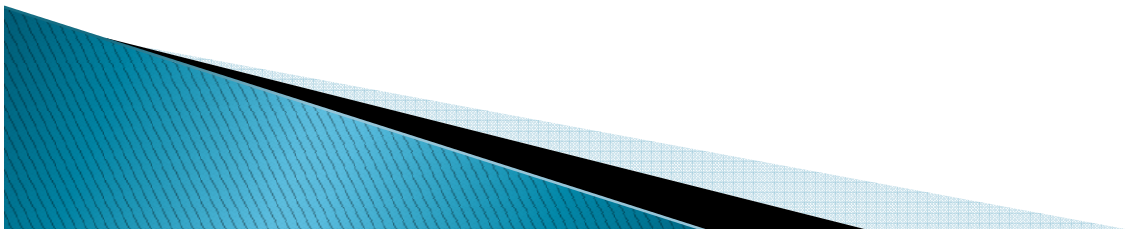
- ▶ Agriculture
 - Grazing Management Education
 - Soil & Water Nutrient Testing
 - Lone Star Healthy Streams Program
- ▶ Wildlife & Feral Hogs
 - Workshops on Feral Hog Management and Whitetail Deer Management
- ▶ Illegal Dumping
 - Don't Mess with Texas Water
 - Texas Waterway Cleanup Program
 - Recreationalist Anti-Litter Campaign



Plum Creek Watershed Partnership



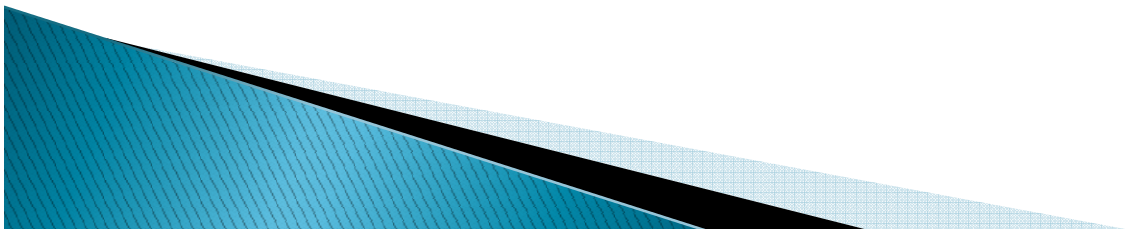
- ▶ Watershed Protection Campaign Brochure
- ▶ Tributary and Watershed Roadway Signage
- ▶ Rainwater Harvesting Education
- ▶ Elementary School Water Quality Project
- ▶ Urban Runoff
 - Storm water BMP Demonstration
 - Household Hazardous Waste Collection Days
 - Pet Waste Programs
- ▶ Online Training for Septic System Owners



Plum Creek Watershed Partnership



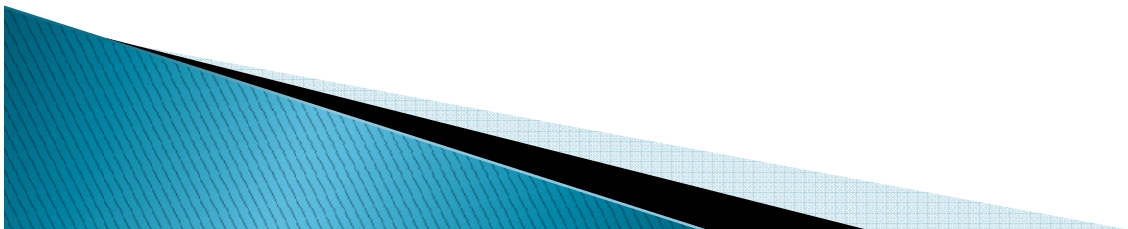
- ▶ Wastewater
 - Fats, Oils, and Grease Workshops
- ▶ Agriculture
 - Soil and Water Testing Campaigns
 - Livestock Grazing Management
- ▶ Wildlife and Non-Domestic Animals
 - Feral Hog Management Workshops
- ▶ Illegal Dumping/Litter Campaign
 - Identification of Priority Clean-up Sites



Arroyo Colorado Watershed Partnership



- ▶ Branding
 - Logo & Watershed Brochure
 - Basic Facts about the Arroyo Colorado thru Fact Sheets and presentations
- ▶ Raise Awareness and Increase Community Involvement in the ACWP Initiative
 - Public Service Announcements and Utility Bill Inserts
- ▶ Develop Partnership Agreements for Message Distribution
 - Target Agricultural, Ecotourism, Sportsmen, Educational Organizations
- ▶ Customize outreach efforts for Specific Target Audiences



Arroyo Colorado Watershed Partnership



- ▶ Institutionalize a Practice of Campaign Evaluation
 - Telephone Research and Stakeholder Interviews
- ▶ Establish Volunteer Monitoring Programs
 - Texas Stream team
 - Conduct Water Quality and Nonpoint source Pollution Conferences and Workshops
- ▶ Collaborate with Government Agencies Offering Environmental E&O
 - TPWD Wildlife Expos
 - Glean Texas GreenScapes
- ▶ Collaborate with NGOs Supporting Environmental Education and Conservation Programs
 - Annual Irrigation Conference
 - Ducks Unlimited



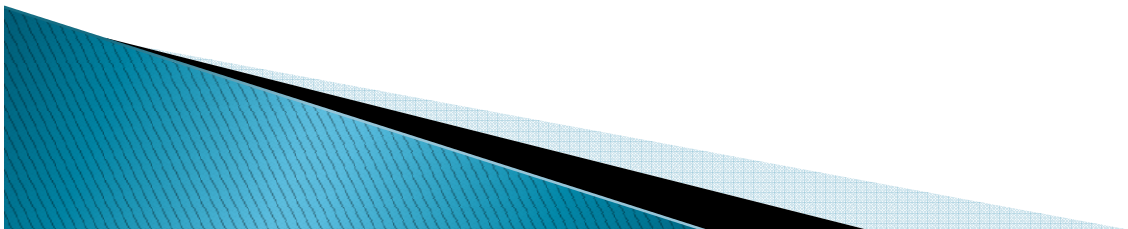
Potential Education Activities

- ▶ Partnerships with schools
- ▶ Water protection brochures
- ▶ Market outreach plan
- ▶ Urban growth workshops
- ▶ Septic system workshops
- ▶ Illegal dumping and litter campaign
- ▶ Agricultural waste collection days
- ▶ Social Media
- ▶ Signage
- ▶ Community Events



Potential Community Event Opportunities

- ▶ Bell County Kidfest –July or August
- ▶ Kids Expo at Bell County Expo Center
- ▶ Celebrate Killeen Festival – May
- ▶ Bell County Crop and Livestock Conference
- ▶ Bell County Professional Groundskeeper Council
- ▶ Bell County Water Symposium –November
- ▶ Belton 4th of July
- ▶ Harker Heights Fun Day at Purser Family Park– July
- ▶ Killeen GIS Day – September or October
- ▶ Fort Hood Earth Fest – April
- ▶ ISD Science Fairs and Career Days
- ▶ Keep Texas Beautiful Events
- ▶ Others??



Questions?



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City of Killeen

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